

Mapping API's: Leaflet - Pre-Built Fill Patterns (Advanced)

Welcome to the Essential ArcGIS Task Sheet Series. This series supplements the Iowa State University Geospatial Technology Training Program short course series. The task sheets are designed to provide quick, easy instructions for performing mapping tasks.

Mapping API's: Leaflet - Pre-Built Fill Patterns (Advanced) **PM2082-16u** introduced setting up pattern fills as a solution for displaying multiple thematic polygon layers in a Leaflet.js map. This task sheet provides advanced setup techniques that can be used to further customize the pre-built or pre-defined line hatch pattern by setting the height and width properties and the characteristics of the space between the primary hatch lines.

1. Leaflet - Fill Pattern Setup

- Start with the basic Leaflet map file and add in the **<head>** a link to the leaflet.pattern plugin. This plugin is available at <https://github.com/teastman/Leaflet.pattern>.

```
<script src="address to your server/Leaflet.  
pattern-master/dist/leaflet.pattern-src.  
js"></script>
```

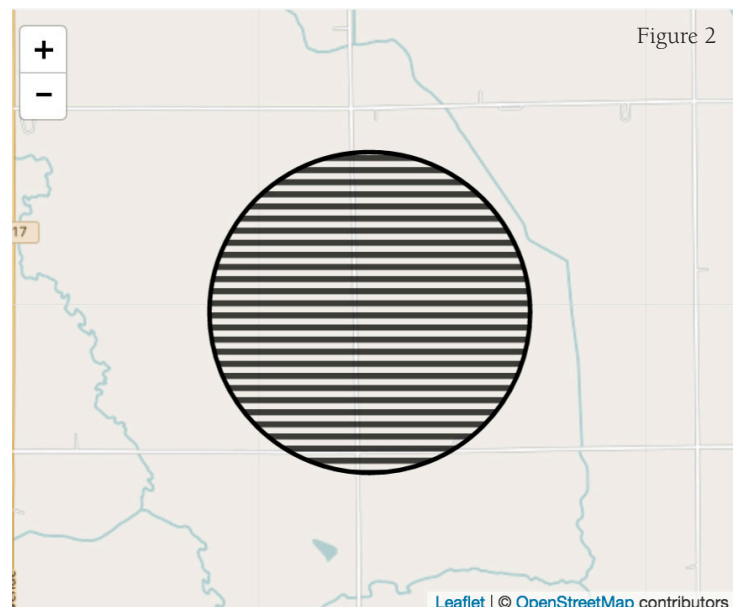
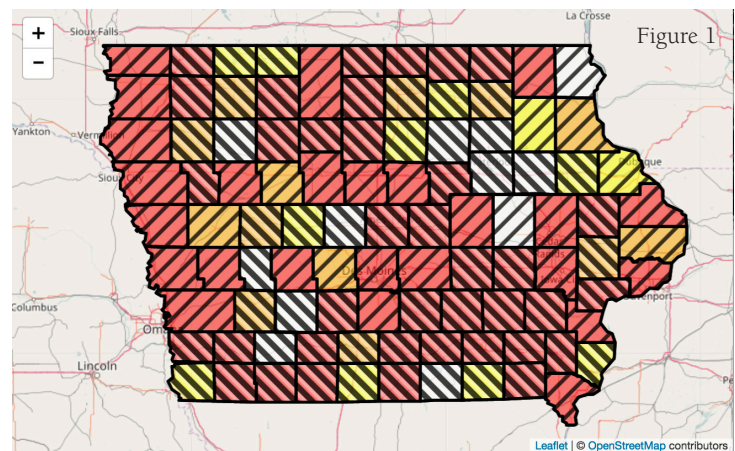
- Add a map constructor and then define and construct the basic stripe pattern below.

```
var myPattern = new L.StripePattern({  
  angle: 0,  
  weight: 4,  
  color: 'black',  
  opacity: 0.75,  
});  
myPattern.addTo(map);
```

- After creating the pattern, add a circle to the map that uses the defined pattern. (Figure 2)

```
var circle = new L.Circle([42.0, -93.795],  
750, {  
  color: 'black'  
  fillPattern: myPattern,  
  fillOpacity: 1.00  
});  
circle.addTo(map);
```

- To modify the thickness of the line stroke, the weight property can be set, but if it is set to 8 or above the stripes will touch each other and appear as a regular fill color. This is because the pattern has a default value of 8 for the height and width of a stripe. To modify the distance, add the height and width properties. Depending on the angle of the pattern the height or width will apply. Currently the angle is set to 0 so the height



property will apply. Modify the height and weight as follows. (Figure 3)

```
height: 24,  
weight: 18,
```

- e. The space between the stripes can also be modified to have a different weight, color, or opacity. The maximum distance available for the space weight is the sum of the height or width - the weight. (Figure 4)

```
spaceWeight: 6,  
spaceColor: 'orange',  
spaceOpacity: 0.5,
```

- f. It is possible to also create a third transparent stripe in the pattern by setting the total value of the weight and spaceWeight values to be less than the height as done by modifying the properties as follows. (Figure 5)

```
height: 24,  
weight: 12,  
spaceWeight: 6,
```

- g. Two additional settings that adjust the pattern's appearance are the offset of the pattern starting position. This is done by setting the x and y properties. The default offset is 0. A y:12 offset for example will change the pattern from figure 5 to the result in figure 6 where the orange stripe is the color at the top of the circle. (Figure 6)

```
x: 0,  
y: 12,
```

- h. A final set of properties that can be set are the **patternUnits** and **patternContentUnits**. These settings are used to define if the x, y, width, and height values are measured against the current user coordinate system, or are in the range of 0.0 - 1.0 as a percentage of the bounding box of their parent element. The options include the default of **userSpaceOnUse** or **objectBoundingBox**. The **patternContentUnits** property differs in that it applies to the spaces within the pattern.

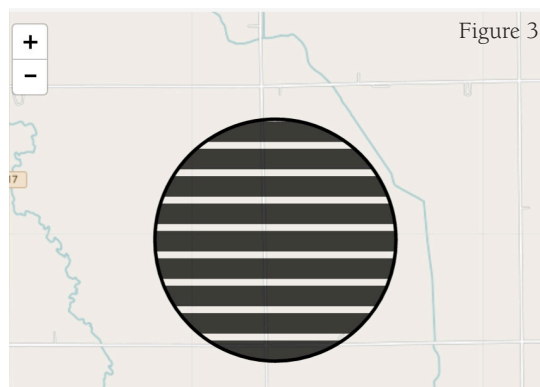


Figure 3



Figure 4



Figure 5

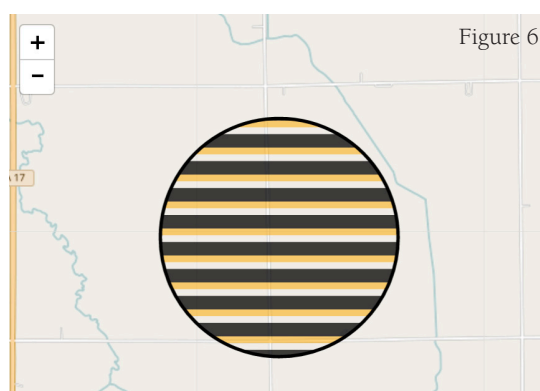


Figure 6

Contact:

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